

30mm x 173mm Air Burst Mmunition

Applications for Ground and Sea Platforms

NDIA

24 April 2007



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Presentation Outline



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This briefing will discuss:

- ATK Air Burst Munitions Evolution
- System Overview
- Air Burst Munition Test Shots and Video

Air Burst Ammo Target Set



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Urban & Wall



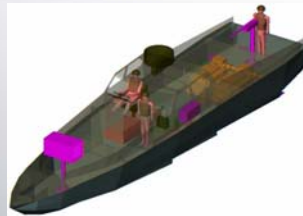
Lightly Fortified
Infantry Emplacement
(LFIE)



ATGM Crew



Troops in squad



Watercraft



BTR
Lightly Armored Vehicles

- Objective Individual Combat Weapon (OICW)
- XM25 Weapon System
- ALACV - Super 40mm Air Burst round
- Medium Caliber Ammunition
 - 20mm
 - 25mm
 - 30mm
- Gun Designer and Producer
 - Bushmaster Family
 - MK44
 - LW25
- Designer and Producer of Inductive Setting Systems

ATK Air Bursting Munitions Evolution



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1999

2001

2002

2003

2004

2005

2006

Shoulder Fire



OICW
20mm Ammo



MEMS

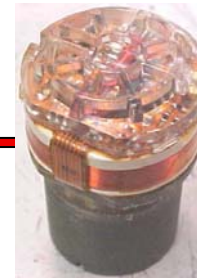


20mm Firing



25mm
Non-Lethal

Common
Air Burst
Fuze



XM25 25mm
MEMS 25mm

Cannon Caliber



30mm ABM
Nose Fuze



30mm Firing
Demonstrations
Dec 2001
May 2002
Nov 2002

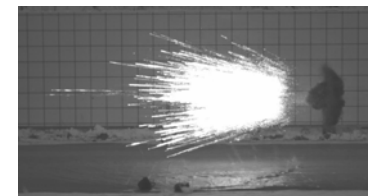


Super 40mm
Development
ALACV

30mm ABM
Base Fuze



MK44 30/40mm Cannon



30mm ABM
Base Fuze Firing

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- Bursting munition applications must be **system integration focused**
 - Open architecture — system of systems
- Bursting munition effectiveness is centered on error budget management
 - Interfaces must be in place “now” for later integration
- Platform integration and interfaces are critical
- Bursting munitions is a **system** not just fuze or ammunition
 - Fuze
 - Setter
 - Gun
 - Fire control interface
 - Human interface

ATK Air Burst System Overview



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Key Components

MK44 Chain Gun



Gun Control Unit (GCU)
with Inductive Fuze Setter



Fire Control
System



ATK ABM Projectile



Expeditionary Fighting Vehicle (EFV)
Other MK44 platforms include:
LPD-17, Bradley Fighting Vehicle & FCS

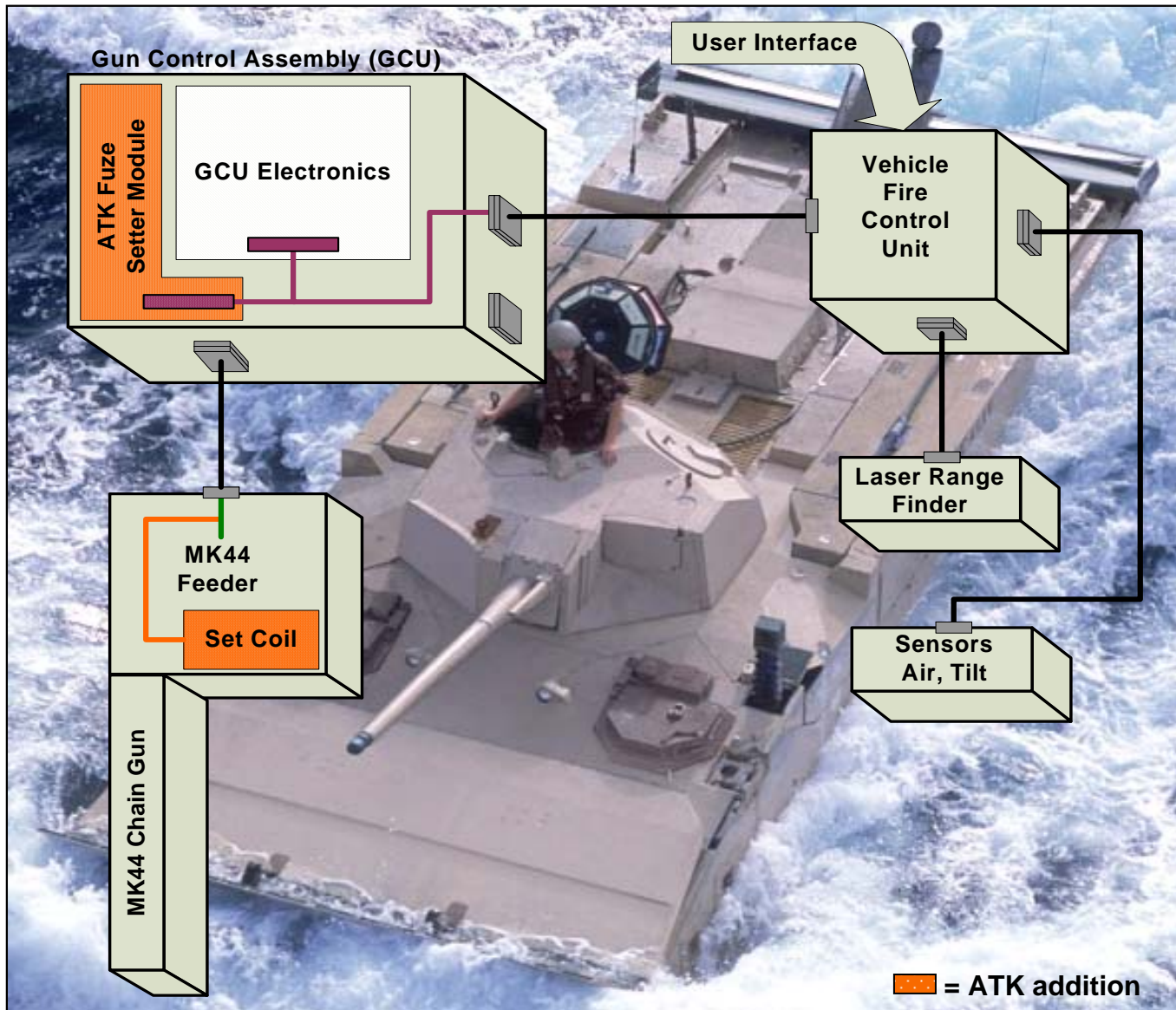
Target Set



MK44 Inductive Setting: System Configuration



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Physical Data

Cartridge Length:	290mm
Cartridge Weight:	728g
Projectile Weight:	423g
Propellant Type:	Single Base
Cartridge Case Length:	173mm
Cartridge Case Material:	Aluminum
Primer:	M36A2 Percussion
Fuze:	ATK Turns/Time

Performance Data

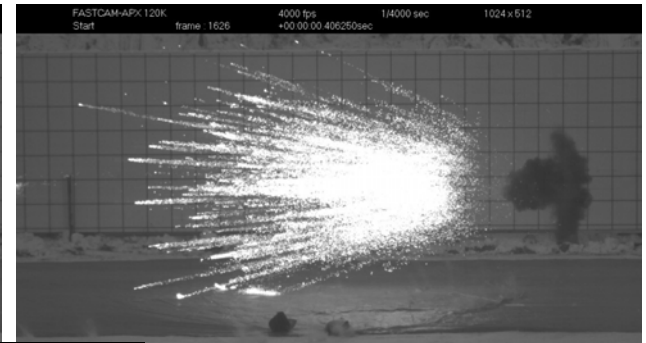
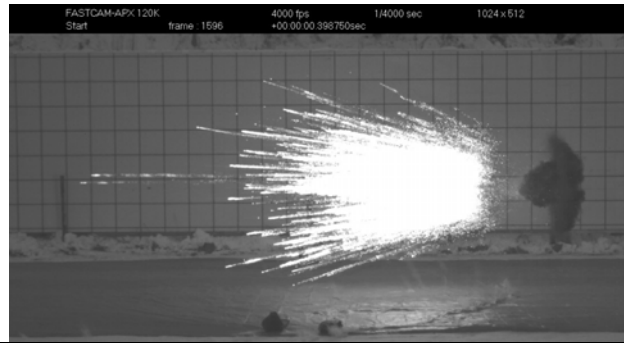
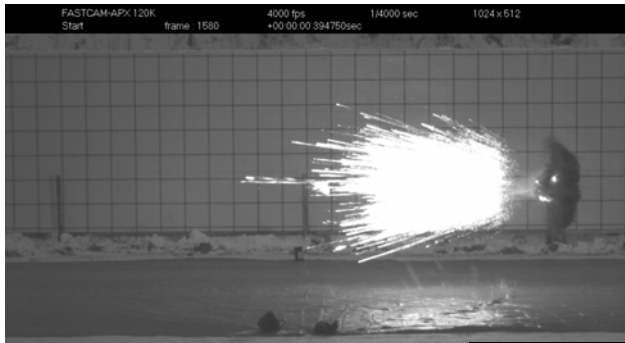
Muzzle Velocity:	980m/s
Chamber Pressure (ambient):	360MPa
Dispersion:	0.5mr
Penetration:	TBD
Trace Time:	2 sec min, 5-6 sec typical



Shot 2 – 500m Air Burst Sequence Highspeed



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Shot 3 – 500m Air Burst



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Down Range Views



Side View

Shot 3 – 500m Air Burst Highspeed



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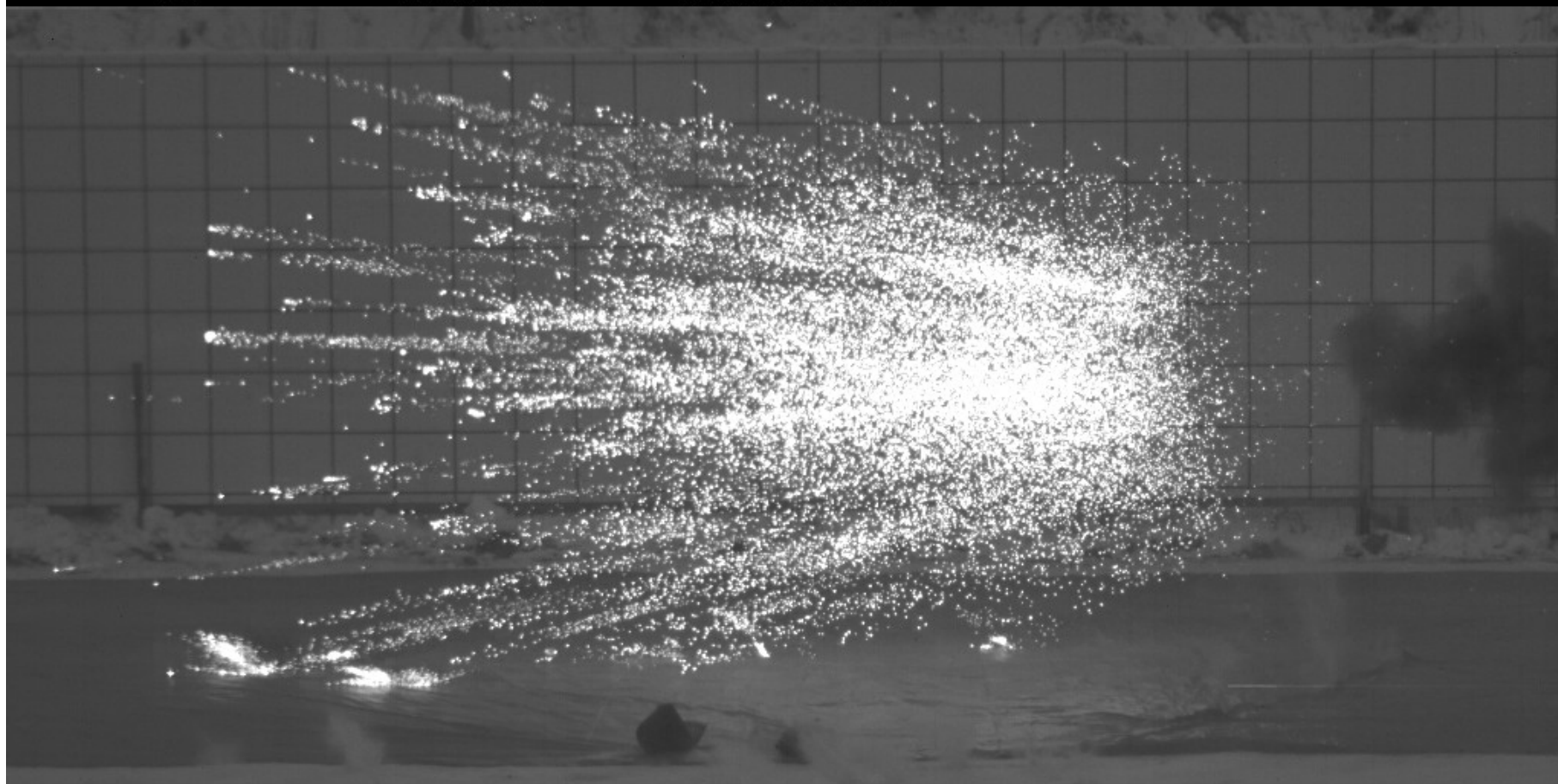
FASTCAM-APX 120K
Start

frame : 1662

4000 fps
+00:00:00.415250sec

1/4000 sec

1024 x 512



ABM Test Video